

## **REMARKS**

Claims 27-29 are pending in the application.

Claim 27 is amended above to include the feature of claim 13. Claim 13 is cancelled from the application.

No new matter is added to the application by way of this claim amendment.

### **I. THE CLAIMED INVENTION**

Independent claim 27 has been amended above to further narrow the invention to an automobile trim piece comprising a preshaped formed aluminum sheet that has a resin layer injected against a face of the shaped aluminum sheet where the resin is nylon resin that includes from about 10 to about 30 wt % glass fibers. The glass filled nylon resin is applied as a hot melt to a preshaped formed aluminum sheet in an injection molding process. An important aspect of the claimed invention is the inventors' discovery that the glass filled nylon resin and the pre-shaped aluminum piece each have coefficients of thermal expansion that are substantially similar. This provides the unexpected result that, as the piece is cooling after it is removed from the mold, the resin and the aluminum sheet contract at the about the same rates meaning that the two pieces portions are unlikely to delaminate from one another and the part is unlikely to warp both of which would otherwise potentially ruin the piece.

### **II. TRAVERSE OF THE OBVIOUSNESS REJECTIONS**

The examiner lodged four (4) different obviousness rejections against the claimed invention. The examiner's rejections are traversed for several reasons below. First, to the extent that the examiner has made out a *prima facie* case of obviousness, the Application has overcome it by demonstrating the claimed invention exhibits unexpected properties not disclosed or suggested by the prior art. Secondly, the claims are patentable because it would require a person of skill in the art at the time to the invention to perform undue experimentation to reach the claimed invention from the cited prior art. Finally, the claims are patentable because the examiner has not made out a *prima facie* case of obviousness – the examiner has not identified any reference that discloses or suggests using glass filled nylon as an automobile trim mold injection resin.

**A. Unexpected Results Cause The Claims To Be Patentable**

Claims 27-29 are non-obvious and patentable because the unexpected combination of aluminum and glass filled nylon resin allows for the injection molding of an automobile trim level piece at high heat without fear of the resin becoming delaminated from the shaped aluminum sheet when the piece is cooled. This unexpected feature is disclosed in the application specification at page 14, lines 8-16.

Usually, a showing of unexpected results is sufficient to overcome a *prima facie* case of obviousness. *See e.g., In re Albrecht*, 514 F.2d, 1389, 1396, 185 USPQ 585, 590 (CCPA 1975). Here, the applicant has shown and claimed that glass filled nylon and preformed aluminum sheet combine to form an injected molded product that resists delamination and warping because the CTE's of the two materials are substantially similar. This showing of unexpected results is not disclosed or suggested by the prior art.

**B. The Pending Claims Are Patentable Because The Claimed Invention Cannot Be Deduced From The Cited Prior Art Without Undue Experimentation**

In order for the prior art to render the subject claims obvious, the steps that need to be taken from getting from the cited prior art to the present claims must be possible without undue experimentation. Additionally, there must be a reasonable likelihood of success in light of the prior art. *Brown & Williamson Tobacco Corp. v. Phillip Morris Inc.* 229 F.3d 1120, 56 USPQ2d 1456, 1459 (2000) citing *In re Dow Chem.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). Claims 27-29 are non-obvious and patentable it is not possible to get from what is disclosed in the prior art to what is claimed without undue experimentation.

The claims require at least two features that would prevent a person skilled in the art at the time of the invention from making the present invention without undue experimentation. The first feature is the requirement for a glass filled nylon resin. The second feature is the requirement for a resin material having a coefficient of expansion that is similar to the coefficient of expansion of the preshaped formed aluminum sheet.

Here, the examiner relies upon Sweeney for disclosing useful classes of resins including polyester, epoxy phenolic, "and the like" including a filler such as glass fibers. The examiner then takes the position – citing Luch - that polyamide resins – which are not disclosed in Sweeney - are "and the like" of the listed Sweeney resins. Finally, the examiner apparently takes the position that it would be obvious to use a nylon resin because it is a species of polyamide

resins disclosed in Luch.

The examiner relies upon Terada et al. in each of the four obviousness rejections for allegedly disclosing the idea of choosing a polymer having a coefficient linear expansion that matches the coefficient of liner expansion of materials to which it is attached. However, the excerpt of Terada relied upon by the examiner merely suggests that pre-molded plastic sheets should be made of a resin that has a liner expansion coefficient that is similar to the metals that the molded resin will eventually be attached to. Moreover, the reference discloses that the temperature over which the liner thermal expansion must remain similar is from -40°C to 80°C which is lower than the temperatures encountered during injection molding.

Getting from the disclosure of Sweeney, Luch and Terada et al. to the claimed invention would clearly not be readily apparent to one skilled in the art at the time of the invention. In other words, one of skill in the art at the time of the invention who combined the three cited references would not easily come into possession of a glass filled nylon resin backed preshaped aluminum piece. Instead, one skilled in the art would have to formulate many different resin systems that included many different fillers and filler amounts to reach the claimed invention. Indeed, as the references themselves demonstrate, there are vast numbers of resins that could be tried in automobile trim pieces applications, many of which have thermal expansion coefficients that are not compatible with materials to which they are associated. Thus, even after combining the references, one of skill in the art at the time of the invention would be left with much undue experimentation before success or failure could be ascertained. For this reason as well Claims 27-29 are non-obvious and patentable.

### **C. There Is No Prima Facie Case Of Obviousness**

Yet another reason that claims 27-29 are non-obvious and patentable is because the examiner has not made out a *prima facie* case of obviousness. Nowhere has the examiner shown that the prior art expressly discloses or suggests the use of nylon resins much less glass filled nylon resins for automobile trim pieces. For at least this reason, there is no *prima facie* case of obviousness.

### CONCLUSION

Claims 27-29 are believed to be patentable over the prior art for at least the reasons recited above. Favorable reconsideration and allowance of all pending application claims is, therefore, courteously solicited.

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